CONSIDER THIS AN INVITATION TO CALL US
IF YOU EVER HAVE A QUESTION ABOUT SYNTHESIZERS.

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ONE SYNTHESIZER MAKES MORE MUSIC!

a comparison of the EML-101, Arp Odyssey, Sonic VI, and Mini-Moog.

WE MAKE THE BEST PORTABLE SYNTHESIZER IN THE WORLD AND CAN PROVE IT.

Before you buy any synthesizer, read this comparison. It proves the 101 is the most capable portable synthesizer.

Consider these facts:

1. Only the 101 has a two-voice polyphonic keyboard controlling four audio oscillators to produce three and four note chords.
2. Only the 101 has a low pass, band pass, high pass voltage controlled filter in place of the simpler low pass filter available on competing synthesizers. This means you get more ability to imitate instruments and to create fantasy sounds.
3. Only the 101 has four voltage controlled audio oscillators. This means more sweeping pitches, more complex patterns, chords, and everything else that goes with the big synthesizer sound.

These are just three examples of the differences between the 101 and its competition. You'll find many more. And they all add up to a big musical plus when you choose the 101.

Take a few minutes, read the following paragraphs, and prove it to yourself. You'll find the 101 is the superior synthesizer.

We know we make the best synthesizers; we want you to know it, too!

KEYBOARDS

All of the compared synthesizer's keyboards are about the same length, can glide between pitches (portamento), and can be transposed. However, the keyboards differ in two important respects:

1. On one synthesizer you can only play one key at a time; on the others you can play two keys at a time. Single key synthesizers are called monophonic; two key synthesizers are called two-voice polyphonic. Two-voice keyboards provide twice the control of pitch.
2. Some synthesizers have the ability to produce microtonal scales (quarter tones, eighth tones, etc.) in addition to semitones.

The 101 has a two-voice polyphonic keyboard with microtonal capability.

KEYBOARD	101	ARP ODYSSEY	MINI-MOOG	SONIC VI
Length (keys)	44	37	44	49
Polyphonic	Yes	Yes	No	Yes
Microtonal	Yes	No	No	Yes

AUDIO OSCILLATORS

The number of audio oscillators determines how many pitched sounds can be produced at once. For example, if a synthesizer has four audio oscillators, a four note chord can be produced. This is accomplished by controlling more than one oscillator with each key depression.

The 101's oscillators have a short term stability of 0.1%.

Oscillator Stability. The stability of the audio oscillators determines how well your instrument stays in tune. This is normally specified as short term stability and typically listed as a percentage between 0.1% and 1.0% — the smaller the percentage, the better the stability.

Oscillator Waveforms. Oscillators provide a number of waveforms which are used to produce different synthesizer voices. All of the compared synthesizers have sufficient waveforms.

The Arp-Odyssey and Sonic VI have a variable pulse width waveform and the EML-101 has continuously variable waveforms in addition to their fixed waveforms. The Mini-Moog has only fixed waveforms.

The 101 has four audio oscillators and can produce up to a four-note chord.

AUDIO OSCILLATORS	101	ARP ODYSSEY	MINI-MOOG	SONIC VI
Number	4	2	3	2
Waveforms	5	3	6	4

CONTROL OSCILLATORS

Control oscillators are used for producing vibratos, tremolos, and modulation. The more waveforms on control oscillators, the more versatile your modulation. As a minimum, the control oscillators should provide triangle, sawtooth, inverted sawtooth, and square waves.

Two of the 101's, one of the Mini-Moog's and ARP's audio oscillators have low frequency ranges for control purposes.

The 101 has three control oscillators with 6 waveforms.

CONTROL OSCILLATORS	101	ARP	MINI-MOOG	SONIC VI
Number	3	2	1	2
Waveforms	6	4	6	4

SAMPLE AND HOLD

The sampler is used to modify control voltages. It permits the generation of random or ordered patterns of tones, spontaneous changes in timbre, or control of the entire synthesizer in place of the keyboard. Simply, it can generate a pattern of pitches automatically. Only the 101 and Arp Odyssey have this ability.

SAMPLE / HOLD	101	ARP ODYSSEY	MINI-MOOG	SONIC VI
Number	1	1	0	0

VOLTAGE CONTROLLED FILTER

The voltage controlled filter is the single most important function on a synthesizer. It determines the timbre of each tone and permits you to imitate instruments and create fantasy sounds. Nothing is as musically fresh as a synthesizer filter, and no other portable synthesizer has as much filter as the 101.

Voltage controlled filters can be divided into two classes:

1. Single mode filters with only low pass control of timbre — the lows can be emphasized and the highs weakened. Single mode filters are found in most synthesizers under $3000.
2. Multi-mode filters with low pass, band pass, and high pass control of timbre. Multi-mode filters can emphasize or weaken either the highs or lows. Multi-mode filters are usually found in more capable, larger synthesizers.

The 101 is the only portable synthesizer with a multi-mode voltage controlled filter. This represents a major breakthrough in portable synthesizer design.

The 101 is the only synthesizer under $3000 with a multi-mode voltage controlled filter.

VOLTAGE CONTROLLED FILTER	101	ARP	MINI-MOOG	SONIC VI
Number	1	1	1	1
Modes	3	1	1	1

ENVELOPE GENERATORS

Envelope generators are used to produce controlled sweeps in pitch, timbre, and loudness. One synthesizer has only one envelope generator; the others have two. Synthesizers with two can use different envelopes for controlling pitch, timbre, or loudness.

Some synthesizers provide multi-stage envelopes; others single stage envelopes. Multi-stage envelopes are more valuable because more complex shaping can be realized.

One synthesizer can combine its envelopes to provide even more complex shaping.

One synthesizer can delay the start of one envelope with respect to key depression.

The 101 has two multi-stage envelope generators that can be combined.

ENVELOPE GENERATORS	101	ARP	MINI-MOOG	SONIC VI
Number	2	2	2	1
Multi-stage	2	1	2	0
Combinable	Yes	No	No	No
Delay	Yes	No	No	No

NOISE GENERATORS

Noise generators provide white and often pink noise sources for generating wind, thunder, and percussive effects. On the 101 and Arp Odyssey, white noise may be used in combination with the sampler to produce random pitch changes.

The 101 is the only synthesizer without pink noise. The flexibility and extra modes of its filter permit a wider range of sounds to be realized from white noise alone.

MICROPHONE AMPLIFIER

The microphone amplifier is used to boost the output of microphones, electric pickups, organs and guitars. It permits these sound sources to be played through the synthesizer and to be modified by it.

The Arp Odyssey is the only synthesizer without this capability.

The 101 has a variable modulator that can be varied from ring to amplitude modulation.

MICROPHONE AMPLIFIER	101	ARP ODYSSEY	MINI-MOOG	SONIC VI
Number	1	0	1	1

RING MODULATORS

Ring modulators are used to modify timbre. They can produce chimes, distortion, and automatic repeat. All of the compared synthesizers except the Mini-Moog contain a ring modulator.

The ring modulator on the 101 and the Sonic VI can be used to modulate organs, electric pianos, etc. The Arp's modulator does not have this ability.

RING MODULATOR

The 101 has the only ring modulator that can function as an amplitude modulator. This means you can simultaneously get the distorted sound of ring modulation and the undistorted original sound.

RING MOD.	101	ARP ODYSSEY	MINI-MOOG	SONIC VI
Number	1	1	0	1

VOLTAGE CONTROLLED AMPLIFIERS

All of the compared synthesizers contain a voltage controlled amplifier. It is used in combination with an envelope generator to control the loudness of each tone.

The Mini-Moog contains a second voltage controlled amplifier for controlling the loudness of each tone from foot pedal. The other three synthesizers also provide this ability.

MIXERS

Only the 101 has mixers with both inputs and outputs.

Mixers are used to combine audio and control signals. The 101 has the only mixers with external inputs and outputs. This feature permits you to combine envelopes, to invert waveforms and envelopes, and to introduce external signals for control or audio purposes.

PATCH PANEL

The 101 is the only synthesizer in this price range with a full patch panel. It is definitely an extra and is not required in live performance.

In live performance, modifications to your sound are made without using the patch panel. This is accomplished by using the internal patching of the synthesizer where the flipping of switches and the rotating of controls determine the particular effect being applied to your sound. The 101 incorporates a number of special rotary controls that permit the selection of either of two signals with a single control.

The patch panel is particularly handy in studio work where its numerous inputs and outputs provide a great deal of versatility. It also permits you to inexpensively expand your instrument with the addition of our Studio Synthesizer and soon with our Sequential Synthesizer.

Only the 101 has the versatility of 44 inputs and outputs.

The patch panel permits you to control any of the synthesizer's effects from foot pedal. These include vibrato, tremolo, filter frequency, glide, oscillator frequency, ring modulation, loudness, introduction of external sources, sweeps – just about anything you can imagine.

PORTABILITY

The 101 and the Sonic VI both fold to form their own carrying case. The 101 is covered in wood-grained Formica. The Sonic VI in gray plastic.

The Mini-Moog and Arp Odyssey both require separate carrying cases.

PRICES

The prices printed are list prices. In some areas and/or to some people, Arps and Moogs are sold below list price.

On the other hand, Electronic Music Labs, Inc. sells its synthesizers at list. Every customer pays the same price.

PRICE	101	ARP ODYSSEY	MINI-MOOG	SONIC VI
	[illegible]	1295	1495	1195

We've covered every major component of the compared synthesizers and feel we've left nothing of importance out. Our exclusions were minor and few.

For example, on the Mini-Moog we did not mention the A-440 oscillator for tuning the synthesizer because it's more normal to tune your synthesizer to your piano or organ.

We did not mention the speaker on the Sonic VI because of its small size and the lack of frequency response.

We neglected terms like "exclusive digital ring modulator". If a synthesizer contains a ring modulator, it doesn't make a bit of difference what kind it is as long as it performs the function of ring modulation.

We did not mention Arp's manually tunable high pass filter. This provides the Arp with a slight advantage over the Mini-Moog and Sonic VI, but does not measure up to the 101's voltage controlled high pass filtering.

We did not mention that on all four synthesizers the voltage controlled filter can be turned into an oscillator. When a filter is used as an oscillator, the filter is no longer available for modifying timbre — the single most important function of a synthesizer. This permits the two oscillator synthesizers to produce three note chords but at the loss of the filter as a timbre modifier.

Similarly, we did not mention the ability of the 101 to convert sawtooth and triangle waveforms into pulse waveforms.

The point is, we covered all the major functions of these synthesizers and have shown you there are big differences between the 101 and its competitors.

ADD IT UP YOURSELF

1. The 101 has the only two-voice polyphonic keyboard controlling four audio oscillators to produce three and four note chords. And our keyboard can be adjusted to microtonal scales.

2. The 101 is the only portable synthesizer with four audio oscillators — simply more sound. And our oscillators are rock stable.

3. The 101 has the only multi-mode voltage controlled filter on any synthesizer under $3000. And if you don't think that's important, ask yourself why the Arp 2500 is available with a multi-mode voltage controlled filter. (The Arp 2500 is Arp's large, modular synthesizer and the multi-mode filter alone costs over $500.) Ask yourself why most of the larger Moogs have both high pass and low pass voltage controlled filters. Our filter is truly a spectacular breakthrough.

4. The 101 is the only portable synthesizer with a full patch panel. And don't forget, all those jacks mean more foot pedals can be used — definitely worthwhile in live performance.

5. The 101 is the only portable synthesizer with two multi-stage envelope generators that can be combined and can be delayed with respect to each other.

Simply, the 101 can do more for your music because it's more synthesizer.

A WORD ABOUT QUALITY

Electronic Music Labs builds your synthesizer with the finest components and an extensive testing program.

Here's a few examples —

Allen-Bradley controls are used throughout and have an unmatched reputation for quality and durability.

Every one of the 56 integrated circuits is pretested before it goes into your synthesizer.

Every power supply runs for a full week and is fully tested before it's put into your synthesizer.

Every synthesizer is assembled, inspected, tested, run night and day for a solid week, and is tested again before being shipped to you.

Testing takes time, but it pays dividends to both of us.

A WORD ABOUT SERVICE!

We do everything possible to eliminate problems because they cost us money and you aggravation. And when and if a problem occurs, we respond as fast as humanly possible.

We consider a service problem to be our problem, not yours.

A WORD ABOUT OUR WARRANTY!

All internal electronics are covered for 1 year for parts and labor. After 1 year, you'll always find us here to give you the same consideration that we'd give to a prospective customer.

BUY A 101! IT'S THE BEST PORTABLE SYNTHESIZER IN THE WORLD.